IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):

Brown, et al.

Appl. No.:

09/159,518

Filed:

September 24, 1998

For:

Novel Opioid Peptides for the Treatment of Pain

Commissioner of Patents and Trademarks Washington, D.C. 20231

Declaration by Joint Inventors (37 C.F.R. § 1.63) and on Behalf of Inventor Who Refuses to Sign or Cannot Be Reached (37 C.F.R. § 1.47(a)), Power of Attorney and Petition Under 37 C.F.R. § 1.47(a)

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, and

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the application identified above.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 C.F.R. § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119, of any United States provisional applications or foreign application(s) for patent or inventor's certificate or of any PCT International Application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application for patent or inventor's certificate or any PCT International Application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application on which priority is claimed:

Page 1 of 8

Application Serial No.	Country	Filing Date (Day/Month/Year)	Priority Claimed (Yes/No)
9403263.8	United Kingdom	21 February 1994	Yes
9408179.1	United Kingdom	25 April 1994	Yes
9401519-5	Sweden	3 May 1994	Yes
9502877-5	Sweden	18 August 1995	Yes.
9503924-4	Sweden	7 November 1995	Yes

I hereby claim the benefit under Title 35, United States Code, Section 120, of any United States application(s) or PCT International Application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56, which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Serial No.	Filing Date	Status (Patented, Pending, Abandoned)
PCT/SE95/00158 PCT/SE96/01011 08/392,918 08/718,585	15 February 1995 14 August 1996 March 3, 1995 October 2, 1996	Abandoned Abandoned Pending Pending

I am signing this declaration on my own behalf and also under 37 C.F.R. § 1.47(a) on behalf of the joint inventor who refuses to sign or cannot be reached and for whom the following particulars are believed by me to be true:

Full name of inventor: John DiMaio

Last known residence: 12404 Pierre Blanchet Citizenship: Canadian

Montreal, Quebec H1E 4L9, Canada

Last known post office address: 12404 Pierre Blanchet

Montreal, Quebec H1E 4L9, Canada

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements ere made with the knowledge that willful talse statements and the like so made are punishable of

Page 2 of 8

fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint Robert A. Armitage, Reg. No. 27,417; Steven R. Borgman, Reg. No. 33,160; W. Scott Brown, Reg. No. 32,968; Barry Bumgardner, Reg. No. 38,397; Andrew G. DiNovo, Reg. No. 40,115; G. Harvey Dunn III, Reg. No. 31,102; Barry E. Engel, Reg. No. 37,127; A.H. Evans, Reg. No. 22,032; Adam Floyd, Reg. No. 39,192; William L. LaFuze; Stuart J. Ford, Reg. No. 37,486; Reg. No. 27,205; J. Clark Martin, Reg. No. 26,198; Gerald D. Malpass, Jr., Reg. No. 40.079; Peter E. Mims, Reg. No. 32,429; Minh-Hien Nguyen, Reg. No. 37,294; Gregory L. Porter, Reg. No. 40,131; W. Ronald Robins, Reg. No. 26,222; Michael A. Sanzo, Reg. No. 36,912; Willem G. Schuurman, Reg. No. 29,998; David B. Weaver, Reg. No. 43,244; and Karen Tucker White, Reg. No. 34,267, all registered to practice before the Patent and Trademark Office as my attorneys with full power of substitution and revocation to prosecute this application and all divisions and continuations thereof and to transact all business in the Patent and Trademark Office connected therewith and request that all correspondence and telephone communications be directed to the following person(s) at the mailing address and telephone number hereafter given:

Name

Michael A. Sanzo

Registration No.

36,912

Address

Vinson & Elkins

2300 First City Tower

1001 Fannin

Houston, TX 77002-6760

Telephone No.

(202) 639-6585

I hereby petition that this declaration be accepted on my behalf and on behalf of the inventor who refuses to sign or cannot be reached, in accordance with 37 C.F.R. § 1.47(a).

Accompanying this declaration and petition are:

1. The petition fee of \$130.00 (37 C.F.R. § 1.17(i)) in accordance with the requirements of 37 C.F.R. § 1.47(a); and

no refuses to sign or rannot he reached

Page 3 of 8

Signature of Inventor William Brown

Residence:

756 Pierre Street

Ste-Dorothée, Laval, Quebec H7X 3L8, Canada

Citizenship:

Canadian

Post Office Address: 756 Pierre Street

Ste-Dorothée, Laval, Quebec H7X 3L8, Canada

Signature of Inventor John DiMaio

Date

Residence:

12404 Pierre Blanchet

Montreal, Quebec H1E 4L9, Canada

Citizenship:

Canadian

Post Office Address: 12404 Pierre Blanchet

Montreal, Quebec H1E 4L9, Canada

Signature of Inventor Peter Schiller

June 1, 1999 Date

Residence:

3475 Mountain Street, App. 1212

Montreal, Quebec H3G 2A4, Canada

Citizenship:

Canada and Switzerland

OSUMINCE Address 475 Mountain Street, Apr.

Montreal, Quebec H3G 2A4, Canada

Page 4 of 8

Deceased - See attached signatures of co-executors

Signature of Inventor René Martel

Date

Last Residence:

1150, Cote Vertu, App. 301

Saint Laurent, Quebec H4L 1Y5, Canada

Last Citizenship:

Canada

Last Post Office Address:

1150, Cote Vertu, App. 301

Saint Laurent, Quebec H4L 1Y5, Canada

Signature of Inventor Wuri Wang

Residence:

2297 Frenette

St-Laurent, Quebec H4R 1M3, Canada

INVENTOR(S) DELETED

ONFUING

Citizenship:

Canada

Post Office Address: 2297 Frenette

St-Laurent, Quebec H4R 1M3, Canada



Co-Executors of Estate of Deceased Inventor René Martel

I hereby declare that my residence and citizenship are as stated below next to my name and that I am executing and signing this Declaration as co-executor of the estate of:

Full name of deceased inventor: René Martel

Country of citizenship of deceased inventor: Canada

Last residence of deceased inventor: 1150, Cote Vertu, App. 301

Saint Laurent, Quebec H4L 1Y5, Canada

Last post office address of deceased inventor: 1150, Cote Vertu, App. 301

Saint Laurent, Quebec H4L 1Y5.

Canada

Upon information and belief, I aver those facts which the inventor is required to state and which are set forth in the accompanying Declaration.

I also hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signature	of mare	cutor Em	ncis Martel
O'Emernic	OT CO-CYC	rumi Lia	ncie Mainei

Date

Residence:

29A Rang St-André St-Philippe, Québec

Canada JOL 2K0

Citizenship:

Canadian

Page 6 of 8

Signature of co-executor Di	iane Martel
-----------------------------	-------------

Date

Residence:

760 Marie LeBer, Apt. 108

Ile des Soeurs, Québec Canada H3E 1W6

Citizenship:

Canadian

Signature of co-executor Pierre Martel

Date

Residence:

109 Maitland

Pointe-Claire, Québec Canada H9R 3X5

Citizenship: Canadian

List of Applications on Which the Name of the Assignee Should Be Changed to AstraZeneca AB

09/159,518

09/254,383

09/254,421

09/308,585

09/254,420

08/776,620

09/043,881

08/718,585

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):

Brown, et al.

Appl. No.:

09/159,518

Filed:

September 24, 1998

For:

Novel Opioid Peptides for the Treatment of Pain

Commissioner of Patents and Trademarks Washington, D.C. 20231

Declaration by Joint Inventors (37 C.F.R. § 1.63) and on Behalf of Inventor Who Refuses to Sign or Cannot Be Reached (37 C.F.R. § 1.47(a)), Power of Attorney and Petition Under 37 C.F.R. § 1.47(a)

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, and

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the application identified above.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

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I hereby claim foreign priority benefits under Title 35, United States Code, Section 119, of any United States provisional applications or foreign application(s) for patent or inventor's certificate or of any PCT International Application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application for patent or inventor's certificate or any PCT International Application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before

Country	Filing Date (Day/Month/Year)	Priority Claimed (Yes/No)
United Kingdom	21 February 1994	Yes
United Kingdom	25 April 1994	Yes
Sweden	3 May 1994	Yes
Sweden	18 August 1995	Yes
Sweden	7 November 1995	Yes
	United Kingdom United Kingdom Sweden Sweden	Country (Day/Month/Year) United Kingdom 21 February 1994 United Kingdom 25 April 1994 Sweden 3 May 1994 Sweden 18 August 1995

I hereby claim the benefit under Title 35, United States Code, Section 120, of any United States application(s) or PCT International Application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56, which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Serial No.	Filing Date	Status (Patented, Pending, Abandoned)
PCT/SE95/00158	15 February 1995	Abandoned
PCT/SE96/01011	14 August 1996	Abandoned
08/392,918	March 3, 1995	Pending
08/718,585	October 2, 1996	Pending

I am signing this declaration on my own behalf and also under 37 C.F.R. § 1.47(a) on behalf of the joint inventor who refuses to sign or cannot be reached and for whom the following particulars are believed by me to be true:

Full name of inventor: John DiMaio

Last known residence: 12404 Pierre Blanchet Citizenship: Canadian

Montreal, Quebec H1E 4L9, Canada

Last known post office address: 12404 Pierre Blanchet

Montreal, Quebec H1E 4L9, Canada

fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint Robert A. Armitage, Reg. No. 27,417; Steven R. Borgman, Reg. No. 33,160; W. Scott Brown, Reg. No. 32,968; Barry Bumgardner, Reg. No. 38,397; Andrew G. DiNovo, Reg. No. 40,115; G. Harvey Dunn III, Reg. No. 31,102; Barry E. Engel, Reg. No. 37,127; A.H. Evans, Reg. No. 22,032; Adam Floyd, Reg. No. 39,192; William L. LaFuze; Stuart J. Ford, Reg. No. 37,486; Reg. No. 27,205; J. Clark Martin, Reg. No. 26,198; Gerald D. Malpass, Jr., Reg. No. 40.079; Peter E. Mims, Reg. No. 32,429; Minh-Hien Nguyen, Reg. No. 37,294; Gregory L. Porter, Reg. No. 40,131; W. Ronald Robins, Reg. No. 26,222; Michael A. Sanzo, Reg. No. 36,912; Willem G. Schuurman, Reg. No. 29,998; David B. Weaver, Reg. No. 43,244; and Karen Tucker White, Reg. No. 34,267, all registered to practice before the Patent and Trademark Office as my attorneys with full power of substitution and revocation to prosecute this application and all divisions and continuations thereof and to transact all business in the Patent and Trademark Office connected therewith and request that all correspondence and telephone communications be directed to the following person(s) at the mailing address and telephone number hereafter given:

Name : Michael A. Sanzo

Registration No. : 36,912

Address : Vinson & Elkins

2300 First City Tower

1001 Fannin

Houston, TX 77002-6760

Telephone No. : (202) 639-6585

I hereby petition that this declaration be accepted on my behalf and on behalf of the inventor who refuses to sign or cannot be reached, in accordance with 37 C.F.R. § 1.47(a).

Accompanying this declaration and petition are:

1. The petition fee of \$130.00 (37 C.F.R. § 1.17(i)) in accordance with the requirements of 37 C.F.R. § 1.47(a); and

the teruses to sign of camporer reached

Signature of I	nventor	William Brown	Date
Residence: Citizenship:	756 Pierre Street Ste-Dorothée, Laval, Quebec H7X 3 Canadian		L8, Canada
Post Office A	ddress:	756 Pierre Street Ste-Dorothée, Laval, Quebec	H7X 3L8, Canada
Signature of I	nventor	John DiMaio	Date
Residence: Citizenship:		Pierre Blanchet eal, Quebec H1E 4L9, Canada ian	
Post Office A	ddress:	12404 Pierre Blanchet Montreal, Quebec H1E 4L9,	Canada
_		Peter Schiller	Date
	Montr	Mountain Street, App. 1212 eal, Quebec H3G 2A4, Canada	1

Montreai, Quebec H3G 2A4, Canada

Deceased - Se	e attach	ed signatures o	f co-executors			
Signature of I	nventor	René Martel		Ī	Date	
Last Residence	e:	1150, Cote Ve Saint Laurent,	ertu, App. 301 Quebec H4L 1	Y5, Cana	ada	
Last Citizensh	iip:	Canada		,		
Last Post Offi	ce Addı	•	Cote Vertu, Ap	•		
		Saint I	Laurent, Quebe	c H4L 1Y	75, Canada	
Signature of In	nventor	Wuxi Wana		Date		
Signature of the	ilventor	wuyi waiig		Date		
Residence:	2297 F	Frenette				
	St-Lau	rent, Quebec H	4R 1M3, Cana	da		
Citizenship:	Canada	a				
Post Office Ad	ddress:	2297 Frenette				
		St-Laurent, Qu	uebec H4R 1M	3, Canada	a	

Co-Executors of Estate of Deceased Inventor René Martel

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Full name of deceased inventor: René Martel

Country of citizenship of deceased inventor: Canada

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Saint Laurent, Quebec H4L 1Y5, Canada

Last post office address of deceased inventor: 1150, Cote Vertu, App. 301

Saint Laurent, Quebec H4L 1Y5,

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Date	
	Date

Residence: 29A Rang St-André St-Philippe, Québec

Canada JOL 2K0

	Hime / In	24/05/99
Signature of c	co-executor Diane Martel	Date
Residence:	760 Marie LeBer, Apt. 108 Ile des Soeurs, Québec Canada H3E 1W6	
Citizenship:	Canadian	
Signature of c	o-executor Pierre Martel	Date
Residence:	109 Maitland Pointe-Claire, Québec Canada H9R 3X5	

Citizenship: Canadian

List of Patents on Which the Name of the Assignee Should Be Changed to AstraZeneca AB

5,756,520

5,968,953

5,912,271

6,031,007

6,034,097

5,670,524

5,834,489

5,856,342

5,961,305

Des. 398,054

5,908,847

5,756,748

6,009,868

5,773,022

5,786,447

5,733,881

5,811,400

5,994,327

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Last known residence: 12404 Pierre Blanchet Citizenship: Canadian

Montreal, Quebec H1E 4L9, Canada

Last known post office address: 12404 Pierre Blanchet

Montreal, Quebec H1E 4L9, Canada

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Registration No. : 36,912

Address : Vinson & Elkins

2300 First City Tower

1001 Fannin

Houston, TX 77002-6760

Telephone No. : (202) 639-6585

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Library Control of the Control

Signature of I	nventor	William Brown	Date	
Residence: Citizenship:	756 Pierre Street Ste-Dorothée, Laval, Quebec H7X 3L8, Canada Canadian			
Post Office A	ddress:	756 Pierre Street Ste-Dorothée, Laval	, Quebec H7X 3L8, Canada	
Signature of I	nventor	John DiMaio	Date	
Residence: Citizenship:		Pierre Blanchet eal, Quebec H1E 4L9 ian	, Canada	
Post Office A	ddress:	12404 Pierre Blanch Montreal, Quebec H		
Signature of I	nventor	Peter Schiller	Date	
Residence:	Montr	Mountain Street, App. eal, Quebec H3G 2A4		
. 1. 1. 1. 1. 1. 1. 1. 1. 1	17		··· • • • • • • • • • • • • • • • • • •	

Montreal, Quebec H3G 2A4, Canada

Deceased - Se	ee attach	ed signatures	of co-executors		
Signature of Inventor René Martel				u, App. 301 Quebec H4L 1Y5, Canada	
Last Residence: 1150, Cote Verto Saint Laurent, Q Last Citizenship: Canada					
Last Post Off	ice Addı		, Cote Vertu, Ap Laurent, Quebe	pp. 301 ec H4L 1Y5, Canada	
Signature of I	nventor	Wuyi Wang		Date	
Residence:	_				
Citizenship:	St-Laurent, Quebec H4R 1M3, Canada o: Canada			ada	
Post Office A	ddress:		te Quebec H4R 1M	13, Canada	

Co-Executors of Estate of Deceased Inventor René Martel

I hereby declare that my residence and citizenship are as stated below next to my name and that I am executing and signing this Declaration as co-executor of the estate of:

Full name of deceased inventor: René Martel

Country of citizenship of deceased inventor: Canada

Last residence of deceased inventor: 1150, Cote Vertu, App. 301

Saint Laurent, Quebec H4L 175, Canada

Last post office address of deceased inventor: 1150, Cote Vertu, App. 301

Saint Laurent, Quebec H4L 1Y5,

3-05-99

Canada

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Signature of co-executor Francis Martel

Date

Residence:

29A Rang St-André

St-Philippe, Québec

Canada J0L 2K0

Marine Marine Community of

Signature of co-executor Diane Martel	Date

Residence: 760 Ma

760 Marie LeBer, Apt. 108

Ile des Soeurs, Québec Canada H3E 1W6

Citizenship: Canadian

Signature of co-executor Pierre Martel

Residence: 109 Maitland

Pointe-Claire, Québec Canada H9R 3X5

Citizenship: Canadian

PATENT/Docket No.: ABA300/58000

ASSIGNMENT TO ASTRA AB

Title:

NOVEL OPIOID PEPTIDES FOR THE TREATMENT OF PAIN AND USE THEREOF

Inventors:

William Brown, John DiMaio, Peter Schiller and René Martel

Serial No.:

Filing Date:

Execution Date of Application:

Docket No.:

ABA/300/58000

Country:

As a below-named inventor, I hereby declare that:

My post office address is as stated below under my signature and I am named as inventor of the inventions or discoveries (herein INVENTIONS) as described in the patent application (herein APPLICATION) identified above. In view of valuable consideration, receipt thereof is hereby acknowledged, I do hereby assign and transfer unto ASTRA AB, a corporation of Sweden having a place of business at Södertälje, its successors and assigns, my entire interest in and the full and exclusive right to the INVENTIONS, the APPLICATION and all related applications (including all divisions, reissues, continuations, and extensions thereof) and all counterparts in other countries, and any and all Letters Patent (and certificates of invention or similar certificates) (herein PATENTS) which may be granted based upon the INVENTIONS or the APPLICATION or related applications or counterparts in other countries; said transfer and assignment being applicable throughout the world. I hereby authorize and request officials of patent offices in any and all countries of the world to issue any and all of the PATENTS, when granted, to ASTRA AB, its successors and assigns, as the assignee of my entire right, title, and interest in and to the same. I agree that I will communicate to ASTRA AB, or its representatives, any facts known to me respecting the invention; testify in any legal proceedings; sign all lawful papers; execute all divisional, continuation, substitution, renewal, and reissue applications; execute all necessary assignment papers to cause any and all of the PATENTS to be issued to ASTRA AB; make all rightful oaths; and generally do everything possible to aid ASTRA AB, its successors and assigns, to obtain and enforce proper protection for the INVENTION in any and all countries throughout the world.

FULL NAME OF FIRST/SOLE INVENTOR: William Brown	
Signature of Inventor:	
Address: 756 St-Pierre Street, Ste-Dorothée, Laval, Quebec H7X 3L8, Canada	
Date: $\frac{26995}{}$	

FULL NAME OF SECOND/JOINT INVENTOR: John DiMaio

Signature of Inventor:

Address: 12404 Pierre Blanchet, Montreal, Quebec H1E 4L9, Canada

Date: 1 chi 4 6 95

PATENT/Docket No.: ABA300/58000

FULL NAME OF THIRD/JOINT INVENTOR: Peter Schiller			
Signature of Inventor:			
Address: 3475 Mountain Street, App. 1212, Montreal, Quebec H3G 2A4, Canada			
Date: FE E 1 4 1995			
FULL NAME OF FOURTH/JOINT/NVENTOR: René Martel			
Signature of Inventor:			
Address: 1150, Cote Vertu, Saint Laurent, Quebec H4L 1Y5, Canada			
Date: Feb 8/1995			



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PILLSBURY MADISON & SUTRO MICHAEL A. SANZO 1100 NEW YORK AVE. NW EAST TOWER - NINTH FLOOR WASHINGTON, DC 20005-3918

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RECORDATION DATE: 07/28/2000 REEL/FRAME: 011204/0219

NUMBER OF PAGES: 7

MERGER (SEE DOCUMENT FOR DETAILS). BRIEF:

ASSIGNOR:

DOC DATE: 01/13/2000 ASTRA AB

ASSIGNEE:

ASTRAZENECA AB

S-151 85 SODERTALJE, SWEDEN

SERIAL NUMBER: 09159518 FILING DATE: 09/24/1998

ISSUE DATE: PATENT NUMBER:

SERIAL NUMBER: 09254383 FILING DATE:

PATENT NUMBER: ISSUE DATE:

FILING DATE: 03/08/1999 SERIAL NUMBER: 09254421

ISSUE DATE: PATENT NUMBER:

011204/0219 PAGE 2

SERIAL NUMBER: 09254420

PATENT NUMBER:

SERIAL NUMBER: 08776620

PATENT NUMBER:

SERIAL NUMBER: 09043881

PATENT NUMBER: 6150335

SERIAL NUMBER: 08718585

PATENT NUMBER:

SERIAL NUMBER: 08403767

PATENT NUMBER: 5756520

SERIAL NUMBER: 09064187

PATENT NUMBER: 5968953

SERIAL NUMBER: 08532844

PATENT NUMBER: 5912271

SERIAL NUMBER: 08875888

PATENT NUMBER: 6031007

SERIAL NUMBER: 08930867

PATENT NUMBER: 6034097

SERIAL NUMBER: 08256319

PATENT NUMBER: 5670524

SERIAL NUMBER: 08851062

PATENT NUMBER: 5834489

SERIAL NUMBER: 08428170

PATENT NUMBER: 5856342

SERIAL NUMBER: 08649624

PATENT NUMBER: 5961305

SERIAL NUMBER: 29060617

PATENT NUMBER: D398054

SERIAL NUMBER: 08765133

PATENT NUMBER: 5908847

SERIAL NUMBER: 08612967

PATENT NUMBER: 5756748

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FILING DATE: 03/08/1999

ISSUE DATE:

FILING DATE: 01/27/1997

ISSUE DATE:

FILING DATE: 04/01/1998

ISSUE DATE: 11/21/2000

FILING DATE: 10/02/1996

ISSUE DATE:

FILING DATE: 03/24/1995 ISSUE DATE: 05/26/1998

ISSUE DATE: 05/26/1998

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ISSUE DATE: 09/23/1997

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FILING DATE: 01/02/1997

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FILING DATE: 03/07/1996

ISSUE DATE: 05/26/1998

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011204/0219 PAGE 3

SERIAL NUMBER: 08448472 PATENT NUMBER: 5786447

SERIAL NUMBER: 08507370 PATENT NUMBER: 5733881

SERIAL NUMBER: 08532688
PATENT NUMBER: 5811400

SERIAL NUMBER: 08809307 PATENT NUMBER: 5994327

SERIAL NUMBER: 08381868
PATENT NUMBER: 5710139

MAURICE CARTER, EXAMINER ASSIGNMENT DIVISION OFFICE OF PUBLIC RECORDS

FILING DATE: 05/31/1995 ISSUE DATE: 07/28/1998

FILING DATE: 08/22/1995

FILING DATE: 08/22/1995 ISSUE DATE: 03/31/1998

FILING DATE: 10/06/1995 ISSUE DATE: 09/22/1998

FILING DATE: 03/13/1997 ISSUE DATE: 11/30/1999

FILING DATE: 02/07/1995 ISSUE DATE: 01/20/1998



MAY 09, 1996

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WASHINGTON, D.C. 20004-1008

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RECORDATION DATE: 03/03/1995

REEL/FRAME: 7805/0463

NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

BROWN, WILLIAM

DOC DATE: 02/08/1995

ASSIGNOR:

DIMAIO, JOHN

DOC DATE: 02/08/1995

ASSIGNOR:

SCHILLER, PETER

DOC DATE: 02/08/1995

ASSIGNOR:

MARTEL, RENE

DOC DATE: 02/08/1995

ASSIGNEE:

AB ASTRA

S-151 85 SODERTALJE, SWEDEN

SERIAL NUMBER: 08392918

FILING DATE: 03/03/1995

7805/0463 PAGE 2

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	Patent and Tradem
To the Honorable Commissioner of Patents and	jinal documents or copy there
Name of conveying party(ies):	Name and address of receiving party(ies):
William Brown; John DiMaio; Peter Schiller; and	Name: AB Astra
René Martel	Internal Address:
Additional name(s) of conveying party(ies) attached? Yes No	
	Street Address: S-151 85 Södertälje
3. Nature of conveyance:	
☑ Assignment☐ Security Agreement☐ Other ☐ Other	City/State/ZIP: <u>Sweden</u>
Execution Date: February 8, 1995	Additional name(s) & address(es) attached?
4. Application number(s) or patent number(s): If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 PCT/SE95/00158 Additional numbers attached	B. Patent No.(s)
A. Patent Application No.(s)	B. Patent No.(s)
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 OF/3929/8 Additional numbers attacked to the second secon	B. Patent No.(s) ached? □ Yes ☑ No
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 OF 39298 Additional numbers attacked to the second	B. Patent No.(s) ached? Yes No 6. Total number of applications and patents involved:
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 Of 39298 Additional numbers atta 5. Name and address of party to whom correspondence concerning document should be mailed: Name: Michael A. Sanzo Internal Address:	B. Patent No.(s) ached?
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 OV/39298 Additional numbers atta 5. Name and address of party to whom correspondence concerning document should be mailed: Name: Michael A. Şanzo Internal Address: Street Address: Vinson & Elkins L.L.P.	B. Patent No.(s) ached? Yes No 6. Total number of applications and patents involved: 7. Total Fee (37 C.F.R. § 3.41)
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 Of 39298 Additional numbers atta 5. Name and address of party to whom correspondence concerning document should be mailed: Name: Michael A. Sanzo Internal Address:	B. Patent No.(s) ached?
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 OF/39298 Additional numbers atta 5. Name and address of party to whom correspondence concerning document should be mailed: Name: Michael A. Sanzo Internal Address: Street Address: Vinson & Elkins L.L.P. 1455 Pennsylvania Avenue, N.W., Suite 800	B. Patent No.(s) ached? Yes No 6. Total number of applications and patents involved: 7. Total Fee (37 C.F.R. § 3.41)
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 OF 39298 Additional numbers atta 5. Name and address of party to whom correspondence concerning document should be mailed: Name: Michael A. Sanzo Internal Address: Street Address: Vinson & Elkins L.L.P. 1455 Pennsylvania Avenue, N.W., Suite 800 City/State/ZIP: Washington, D.C. 20004-1008 MS19607 03/07/95 08392918 22-036	B. Patent No.(s) ached? Yes No 6. Total number of applications and patents involved: 7. Total Fee (37 C.F.R. § 3.41)
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 OF 39298 Additional numbers atta 5. Name and address of party to whom correspondence concerning document should be mailed: Name: Michael A. Sanzo Internal Address: Street Address: Vinson & Elkins L.L.P. 1455 Pennsylvania Avenue, N.W., Suite 800 City/State/ZIP: Washington, D.C. 20004-1008 MS19607 03/07/95 08392918 22-036	B. Patent No.(s) ached? Yes No 6. Total number of applications and patents involved: 7. Total Fee (37 C.F.R. § 3.41)
If this document is being filed together with a new application, A. Patent Application No.(s) PCT/SE95/00158 OV/39278 Additional numbers atta 5. Name and address of party to whom correspondence concerning document should be mailed: Name: Michael A. Sanzo Internal Address: Street Address: Vinson & Elkins L.L.P. 1455 Pennsylvania Avenue, N.W., Suite 800 City/State/ZIP: Washington, D.C. 20004-1008 MS19607 03/07/95 08392918 22-036	B. Patent No.(s) ached? Yes No 6. Total number of applications and patents involved: 7. Total Fee (37 C.F.R. § 3.41)

08-28-2000 FORM PTO-1594 (Rev. 6-93) OBM No. 0651-0011 (exp. 474) 101444454 To the Honorable Commissioner of a management ied original documents or copy thereof. 2. Name and address of receiving party(ies): 1 Name of conveying party(ies): Name. AstraZeneca AB Astra AB Internal Address: Additional name(s) of conveying party(ies) attached? Tyes No JUL 2 8 2000 Street Address: 3. Nature of conveyance: City/State/ZIP S-151 85 Södertälje Assignment Security Agreement ⊠ Merger Change of Name SWEDEN Other Additional name(s) & address(es) Execution Date: January 13, 2000 ☐ Yes 🖾 No attached? 4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application is: B. Patent No.(s) A. Patent Application No.(s) SEE LIST ATTACHED SEE LIST ATTACHED Additional numbers attached?

Yes

No Name and address of party to whom correspondence concerning 6. Total number of applications and patents involved: document should be mailed: 27 Name: Michael A. Sanzo Internal Address: 7. Total Fee (37 C.F.R. § 3.41) \$___ 1,080.00 ⊠ Enclosed Authorized to be charged to deposit account Pillsbury Madison & Sutro Street Address East Tower - Ninth Floor 1100 New York Avenue, N.W. 8 Deposit account number: Washington, D.C. 20005-3918 Tity State ZIP. 08/24/2000 DNGUYEN 00000200 09159518 (Attach displicate copy of this page if paying by deposit account) 01 F1:581 DO NOT USB THIS SPACE 1080.00 OP Statement and signature 4 The second of Total number of pages including cover sheet, attachments, and document 0

FORM PTO-1594 (Rev. 6-93)

OBM No. 0651-0011 (exp. 4/94)

11-08-2000



(마니오) 나는) 중요하는 사람들이 입으러 중요하다 (마니오 시프로드 기업기도 내가 (마요)						
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Patent and Trademark Office

To the Honorable Commissioner of l	8799 original documents or copy thereof.		
1 Name of conveying party(ies): Astra AB Additional name(s) of conveying party(ies) attached? Yes No	Name and address of receiving party(ies): Name: AstraZeneca AB Internal Address:		
3. Nature of conveyance: ☐ Assignment	Street Address: City/State/ZIP: S-151 85 Södertälje		
Security Agreement Change of Name Other	SWEDEN		
Execution Date: January 13, 2000	Additional name(s) & address(es) attached?		
 4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution A. Patent Application No.(s) SEE LIST ATTACHED Additional numbers attached 	B. Patent No.(s) SEE LIST ATTACHED		
5. Name and address of party to whom correspondence concerning document should be mailed:	6. Total number of applications and patents involved:		
Name: Michael A. Sanzo Internal Address:	7. Total Fee (37 C.F.R. § 3.41) FRE ALREADY PAID. Enclosed SEE PREVIOUS COUER SHEET.		
Street Address: Pillsbury Madison & Sutro East Tower - Ninth Floor 1100 New York Avenue, N.W.	Authorized to be charged to deposit account 1060		
City State ZIP: Washington, D.C. 20005-3918	8. Deposit account number:		
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MICHAEL A SANZO VINSON AND ELKINS 2300 FIRST CITY TOWER 1001 FANNIN HOUSTON, TX 77002-6760 M TOPY MAILED

DEO 3 1999 **HOV 3 0 1999**

SPECIAL PROGRAMS OFFICE DAC FOR PATENTS

In re Application of Brown, DiMaio, Schiller, Martel (deceased) and Wang : DECISION ACCORDING STATUS Application No. 09/159,518

Filed: September 24, 1998 For: Novel Opioid Peptides for 4,500 the Treatment of Pain

: UNDER 37 CFR 1.47(a)

This is in response to the papers filed June 2, 1999, which have been treated as a petition under 37 CFR 1.47(a).

The petition is granted.

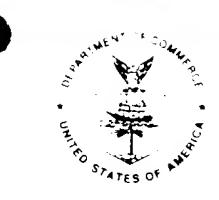
Petitioner has shown that the non-signing inventor has refused to join in the filing of the above-identified application.

The above-identified application and papers have been reviewed and found in compliance with 37 CFR 1.47(a). This application is hereby accorded Rule 1.47(a) status.

As provided in Rule 1.47(a), this Office will forward notice of this application's filing to the non-signing inventor at the address given in the Declaration. Notice of the filing of this application will also be published in the Official Gazette.

After this decision is mailed, the above identities application will be forwarded to Group Art Unit 1846.

Telephone inquiries regarding this decision should be directed to the undersigned at 1703 306-3159.



UNITED ST. EPARTMENT OF COMMERCE

Patent and Trademark Office

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Washington, D.C. 20231

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John DeMaio 12404 Pierre Blanchet Montreal Quebec H1E 4L9 CANADA

NOV 3 0 1999

SPECIAL PROGRAMS OFFICE DAC FOR PATENTS

In re Application of Brown, DiMaio, Schiller, Martel (deceased) and Wang Application No. 09/159,518

Filed: September 24, 1998
For: Novel Opioid Peptides for the Treatment of Pain

Dear Mr. DeMaio:

You are named as a joint inventor in the above identified United States patent application, filed under the provisions of 35 U.S.C. 116 (United States Code , and 37 CFR 1.47(a , Rules of Practice in Patent Cases. Should a patent be granted on the application you will be designated therein as a joint inventor.

As a named inventor you are entitled to inspect any paper in the file wrapper of the application, order copies of all or any part thereof (at a prepaid cost per 37 CFR 1.19) or make your position of record in the application. Alternatively, you may arrange to do any of the preceding through a registered patent attorney or agent presenting written authorization from you. If you care to join the application, counsel of record (see below would presumably assist you. Joining in the application would entail the filing of an appropriate oath or declaration by you pursuant to 37 CFR 1.63.

Telephone inquiries regarding this communication should be directed to the undersigned at 4703)305-9285. Requests for information regarding your application should be directed to the File Information Unit at 703-318-2733. Information with the File Information Unit at 703-318-2733. Information 1992 to the application, and the application, and the application of the Application, and the alternation description at 1992 to the Application, and the application description at 1992 to the Application of the Application and the Application and the Application of the Application and the Application at 1992 to the Application and the Application an

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